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1302449

THE UNITED STATES OF AMERICA

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March 31, 2005

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APPLICATION NUMBER: 60/549,408

FILING DATE: *March 01, 2004*

RELATED PCT APPLICATION NUMBER: *PCT/US05/06771*



Certified by

Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office



20427 U.S. PTO

PTO/SB/16 (08-03)

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. EL 982740323 US

22264 U.S. PTO
60/549408

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Errol		DREW		Southbridge, Northampton, United Kingdom	
Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (500 characters max)					
A SINGLE MAIN BEAM BICYCLE AND A SEPARABLE JOINT					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number: 00959					
OR					
<input type="checkbox"/> Firm or Individual Name		David J. Ridders LAHIVE & COCKFIELD, LLP			
Address		28 State Street			
City	Boston	State	MA	Zip	02109
Country	US	Telephone	(617) 227-7400	Fax	(617) 742-4214
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/>	Specification Number of Pages	6	<input type="checkbox"/>	CD(s), Number	
<input checked="" type="checkbox"/>	Drawing(s) Number of Sheets	4	<input type="checkbox"/>	Other	
<input checked="" type="checkbox"/>	Application Data Sheet. See 37 CFR 1.76 (specify):				
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
<input checked="" type="checkbox"/>	Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$) 80.00
<input type="checkbox"/>	A check or money order is enclosed to cover the filing fees.				
<input checked="" type="checkbox"/>	The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 12-0080				
<input type="checkbox"/>	Payment by credit card. Form PTO-2038 is attached.				
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/>	No	<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are:			

(Page 1 of 1)

Respectfully submitted,

Date March 1, 2004

SIGNATURE

TYPED OR

PRINTED NAME David J. Ridders

TELEPHONE (617) 227-7400

REGISTRATION NO.
(if appropriate)

43,882

Docket Number:

DCP-008-1

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

Certificate of Express Mailing Under 37 CFR 1.10

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, Airbill No. EL 982740323 US in an envelope addressed to:

MS Provisional Patent Application
Commissioner for Patents
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Alexandria, VA 22313-1450

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Date



Signature


David J. Ridders

Typed or printed name of person signing Certificate

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

Specification (6 pages)
Drawings (4 sheets)
Provisional Patent Application Transmittal (1 page)
Application Data Sheet (2 pages)
Fee Transmittal (1 page)
Charge \$80.00 to deposit account 12-0080
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FEE TRANSMITTAL for FY 2004				Complete if Known																																																																																																																																																																																																			
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Name (Print/Type)		David J. Ridders		Registration No. (Attorney/Agent)	43,882		Telephone	(617) 227-7400																																																																																																																																																																																															
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A SINGLE MAIN BEAM BICYCLE AND A SEPARABLE JOINT

Technical Field

5 The invention relates generally to bicycles and to separable joints.

Brief Description of the Drawings

 The invention will be apparent from the description herein and the accompanying drawings, in which like reference characters refer to the same parts throughout the
10 different views.

 Figure 1 is a side view of a bicycle according to an embodiment of the invention;

 Figure 2 is an exploded view of a separable joint according to an embodiment of the invention;

 Figure 3 is a reverse view of a second portion of the separable joint of Figure 2;

15 Figure 4 is an exploded view of a separable joint according to an embodiment of the invention;

 Figure 5 is a reverse view of a second portion of the separable joint of Figure 4;

 Figure 6 is an exploded view of a separable joint according to an embodiment of the invention; and

20 Figure 7 is a reverse view of a second portion of the separable joint of Figure 6.

Detailed Description

 The present invention in one embodiment provides a bicycle. Another embodiment provides a beam joint. The bicycle may optionally use the beam joint.

25 Figure 1 illustrates a bicycle 200 according to an example embodiment of the invention. The bicycle 200 includes a single main tube 210 having a portion 212

extending beyond a head tube 240. Optionally, the main tube 210 may form a storage compartment in the portion 212 extending beyond the head tube 240. A support tube 230 may be provided between a seat tube 220 and the main tube 210. The support tube 230 may provide additional support to the seat tube 220 and may be used as a handle to lift the bicycle 200. Optionally, a contoured hand grip (not shown) may be provided on the support tube 230 to aid in gripping the support tube 230. Optionally, the seat tube 220 may be oversized in thickness. Examples of ranges of external diameters of the seat tube 220 include at least 45 millimeters and/or a range of 45 to 65 millimeters. In one embodiment, the seat tube 220 has an external diameter of 54 millimeters.

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The bicycle may be formed of a wide variety of materials known for use with forming bicycles.

The bicycle 200 may optionally use a separable joint 100 along the main tube 210. The separable joint 100 may be located as illustrated in Figure 1, or may be located anywhere along the main tube 210. The separable joint 100 can allow the bicycle to be separated into two pieces to aid in transport or storage of the bicycle 200. By providing an ability to separate the bicycle 200 into two pieces, the bicycle 200 may be more easily stored in a trunk of a car, a closet or an office, than a bicycle that merely provides a folding capability.

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Examples of separable joints are provided in Figures 2-7. With reference to Figure 2, a separable joint 100A is illustrated in exploded form by way of example. The separable joint 100A is implemented in a six-sided beam or post, such as may optionally be used in connection with the bicycle 200. According to the illustrative embodiment of

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Figures 2 and 3, the separable joint 100A is provided with a first portion 120 that is separable from a second portion 160. Figure 3 provides a reverse view of the second portion 160. Each of the first and second portions 120, 160 has a protruding element that interact with the protruding element of the other portion. The first portion 120 has a first protruding element 130, and the second portion 160 has a second protruding element 170.

The first and second protruding elements 130, 160 are provided with first and second end faces 126, 166, first and second bevel faces 132, 172 and optionally with first and second protruding element tip faces 131, 171. Optional first and second side faces 124, 164 extend to first and second inner faces 127, 167. The protruding element tip faces 131, 171 and/or the first and second inner faces 127, 167 may optionally be of a very small width or be omitted altogether.

The first inner face 127 is provided with a transverse stabilizer 125 and the second end face 166 is provided with a transverse stabilizer receptor 165. An optional fastener hole 168 is provided in the second portion 160 in which to locate a fastener that can extend into or through the first portion 120 to further secure the first portion 120 to the second portion 160. If the fastener extends into the first portion 120, the hole (not shown) in the first portion 120 to receive the fastener may be configured to retain the fastener in the hole, coupled to the first portion 120. In one example, threads are provided in a hole in the first portion 120 such that a bolt provided through the fastener hole 168 in the second portion 160 may be secured to the first portion 120 by the use of the threads.

In operation, the separable joint 100A is configured to receive tensile, compression and shear loads, individually and in combination. The first and second bevel faces 132, 172 contact each other to inhibit separation of the first and second inner faces 127, 167 from the first and second end faces 126, 166. By inhibiting separation of the first inner face 127 from the second end face 166, the transverse stabilizer 125 remains coupled to the transverse stabilizer receptor 165. The transverse stabilizer 125 and the transverse stabilizer receptor 165 maintain transverse alignment of the first and second portions 120, 160 by preventing the first and second portions 120, 160 from sliding past each other. A fastener, if used, may not be subjected to substantial forces. The fastener is configured to inhibit separation of the first and second bevel faces 132, 172.

The separable joint may be formed of a wide variety of materials. Examples include metals, such as aluminum, magnesium, titanium, steel and others, plastics or wood. Optionally, the transverse stabilizer 125 may be formed of a high friction material to aid in retaining the transverse stabilizer 125 within the transverse stabilizer receptor 165. Examples of such high friction material can include rubber or plastics. Surface treatments may also be used to aid in retaining the transverse stabilizer 125 within the transverse stabilizer receptor 165. In such a case, the transverse stabilizer 125 and/or the transverse stabilizer receptor 165 may be provided with a high-friction surface treatment, such as, for example, a roughened surface, to seek to maintain the transverse stabilizer 125 within the transverse stabilizer receptor 165.

To separate the separable joint 100A, any fastener used may be removed from the fastener hole 168 and is at least removed from engagement of the first portion 120.

The separable joint 100A may then be separated by laterally separating the first and second portions 120, 160, sliding the transverse stabilizer 125 out from within the transverse stabilizer receptor 165.

5 Figures 4 and 6 provide additional examples of separable joints 100B, 100C in tubes or beams of other cross-sections. The separable joints 100B, 100C have analogous components to those discussed above in relation to the separable joint 100A of Figure 1. Figures 5 and 7 provide reverse views of the second portions 160 of the separable joints 100B, 100C of Figures 4 and 6, respectively.

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 The present invention has been described by way of example, and modifications and variations of the described embodiments will suggest themselves to skilled artisans in this field without departing from the spirit of the invention. Aspects and characteristics of the above-described embodiments may be used in combination. The
15 described embodiments are merely illustrative and should not be considered restrictive in any way. The scope of the invention is to be measured by the appended claims, rather than the preceding description, and all variations and equivalents that fall within the range of the claims are intended to be embraced therein.

What is claimed is:

1. A bicycle frame, comprising:
a head tube; and
5 a main tube, said main tube extending past said head tube.
2. A bicycle frame, comprising:
a seat tube;
a main tube; and
10 a support tube extending diagonally from a portion of said seat tube proximate to
a location for mounting a seat to a portion of said main tube between said seat tube and a
head tube.
3. A beam joint, comprising:
15 a first portion having a first protruding element with a first beveled face;
a second portion having a second protruding element configured to mate with
said first protruding element;
a transverse stabilizer on said first portion; and
a transverse stabilizer receptor for receiving said transverse stabilizer.

20

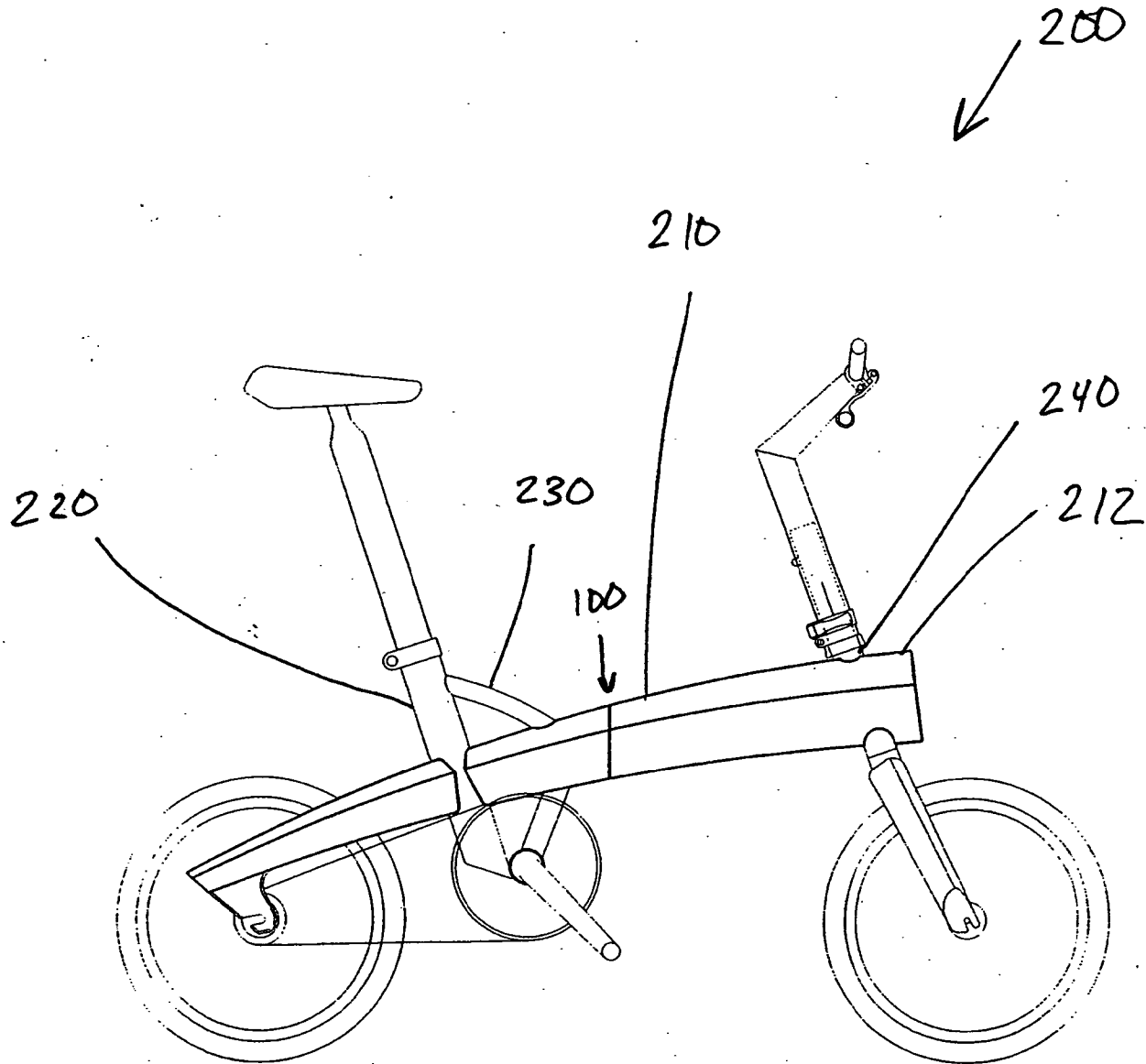


FIGURE 1

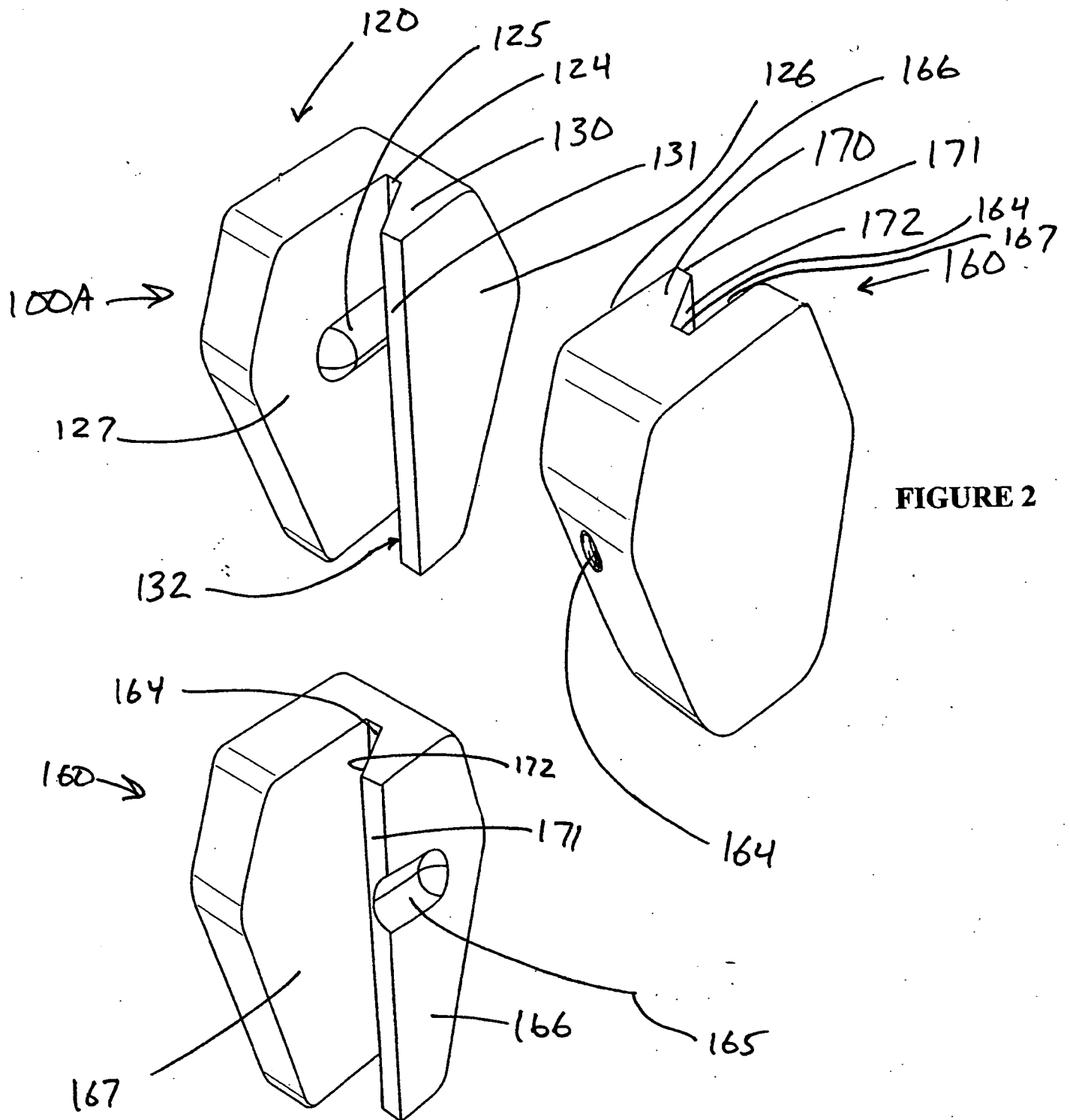


FIGURE 2

FIGURE 3

3/4

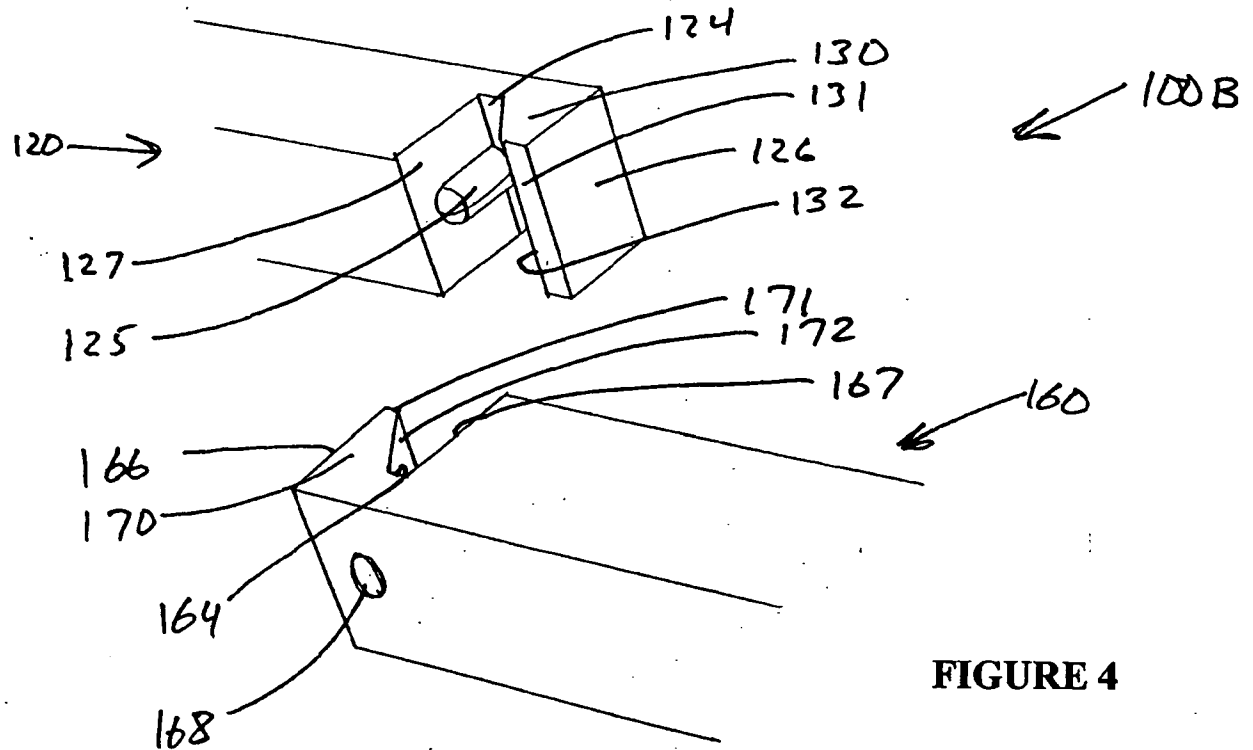


FIGURE 4

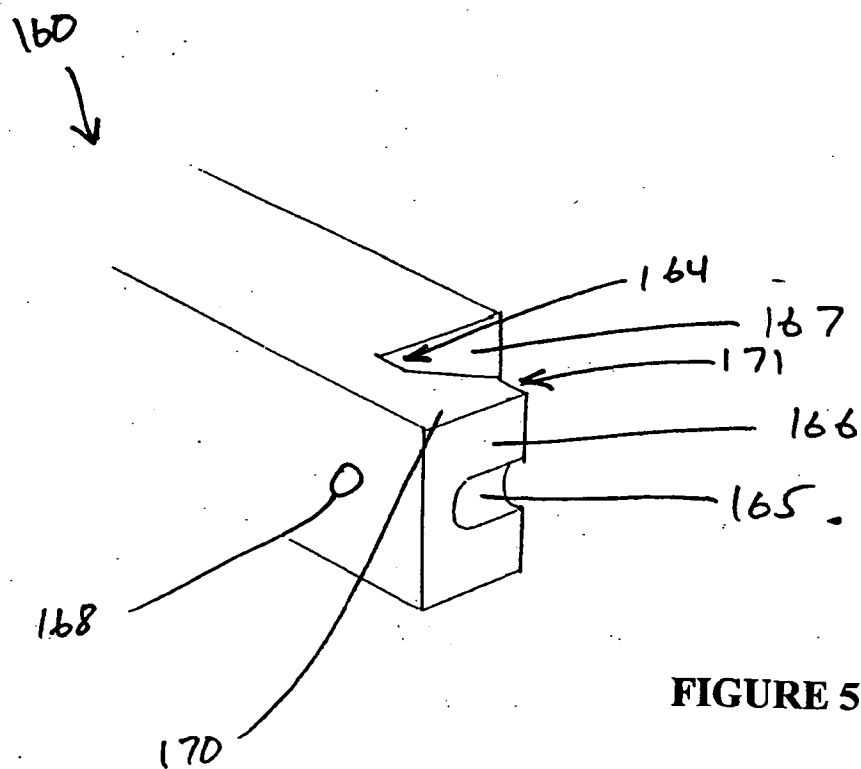


FIGURE 5

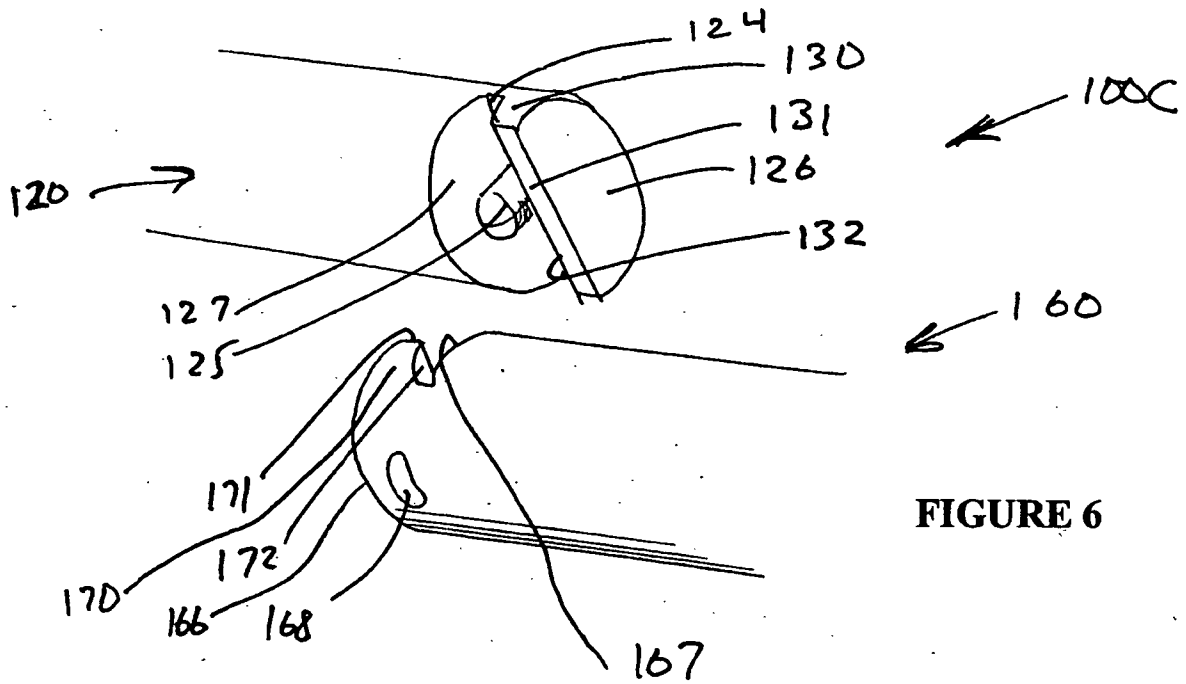
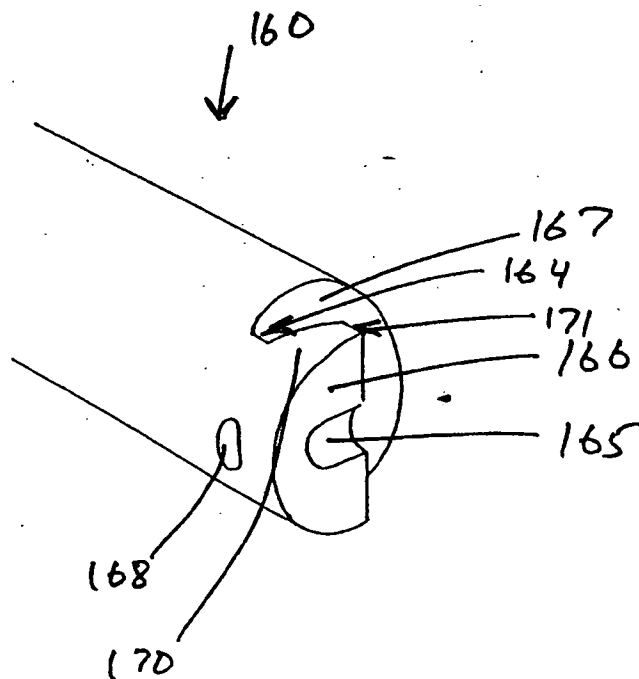


FIGURE 6

FIGURE 7



Application Data Sheet

Application Information

Application Type::	Provisional
Subject Matter::	Utility
Suggested Group Art Unit::	N/A
CD-ROM or CD-R?::	None
Sequence submission?::	None
Computer Readable Form (CRF)?::	No
Title::	A SINGLE MAIN BEAM BICYCLE AND A SEPARABLE JOINT
Attorney Docket Number::	DCP-008-1
Request for Early Publication?::	No
Request for Non-Publication?::	No
Total Drawing Sheets::	4
Small Entity?::	Yes
Petition included?::	No
Secrecy Order in Parent Appl.?::	No

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